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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/574,929	04/07/2006	Emmanuel Damery	127643	5549
25944 7590 06/23/2009 OLIFF & BERRIDGE, PLC P.O. BOX 320850 ALEXANDRIA, VA 22320-4850				
EXAMINER				
LAIOS, MARIA J				
ART UNIT		PAPER NUMBER		
1795				
MAIL DATE		DELIVERY MODE		
06/23/2009		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/574,929

**Applicant(s)**

DAMERY ET AL.

**Examiner**

MARIA J. LAIOS

**Art Unit**

1795

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☐ Claim(s) \_\_\_\_ is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF/88)  
Paper No(s)/Mail Date 20060407
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Claim 5 states "the anode consists of an alternation of first and second thin layers". As written it is unclear if the first and second layers are alternated thus only two layers exist or if there are a total of four layers with the first and third layer comprising the same material and the second and forth layers comprising the same material. For the purposes of examination the latter interpretation will be made as is supported by Figure 2.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Art Unit: 1795

5. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Fauvarque (US 5,569,559).

As to claims 1 and 2, Fauvarque discloses a fuel cell (Figure 6) with an alkaline solid polymer electrolyte. The anode comprises a first layer consisting of aluminum metal leaf and a second layer coving the first layer made of zinc (col. 10 lines 11-15).

6. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Remppel (US 5,316,632).

As to claims 1 and 2, Remppel discloses an aluminum air fuel cell (col. 1 lines 13-15) comprising an electrolyte (13) with an anode (11). The anode comprises first and second thin films of aluminum or aluminum alloy (col. 4 line 45 and col. 4 line 62) and zinc (col. 4 line 56).

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 5 rejected under 35 U.S.C. 103(a) as being unpatentable over Fauvarque (US 5,569,559).

As to claim 5, Fauvarque discloses the anode comprising a first layer of aluminum and a second layer of zinc (col. 10 lines 11-15) but fails to disclose four layer anode with an alternating of the first layer and the second layer.

However, it has been held that "mere duplication of parts has no patentable significance unless a new and unexpected result is produced" (MPEP 2144.04(VI)(B); *In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960)).

9. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fauvarque (US 5,569,559) as applied to claims 1 and 2 above and further in view of Evans et al. (US 5,006,424).

Fauvarque et al discloses an aluminum metal with a zinc coating as is disclosed above but fails to disclose the coating as a zinc alloy.

Evans et al. discloses a zinc air battery with an alkaline electrolyte (col. 2 lines 55) and teaches zinc or a zinc alloy can be used as a coating (col. 2 line 59) of a particle. It would have been obvious to one of ordinary skill in the art at the time of the invention to replace the zinc coating of Fauvarque et al with a zinc alloy coating because Evans et al. teaches these to be known equivalents and one would have a reasonable expectation of success in doing so.

10. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fauvarque (US 5,569,559) as applied to claims 1 and 2 above and further in view of Iarochenko et al. (US 6,355,369 B1).

As to claim 4, Fauvarque et al discloses an aluminum metal with a zinc coating as is disclosed above but fails to disclose the thickness of the coating from 10nm to 100microns.

Iarochenko et al. discloses an air metal current battery with a zinc coating on an aluminum electrode. Iarochenko teaches the zinc coating is used as an inhibitor (col. 17 line 66-col. 18 lines 4). Iarochenko teaches the coating should be efficient to supply the inhibitor on the surface but not large enough to have a notable adverse effect of the electrolytes conductivity (col. 17 lines 50-53).

Since this particular parameter is recognized as a result effective variable, i.e., a variable which achieves a recognized result, the determination of the optimum or workable ranges of said variable can be characterized as routine experimentations. See also *In re Boesch*, 617 F.2d 272, 205 USPQ 215 CCPA 180.

11. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fauvarque (US 5,569,559) in view of Masotti (US 3,773,639).

As to claim 6, Fauvarque discloses a fuel cell (Figure 6) with an alkaline solid polymer electrolyte. The anode comprises a first layer consisting of aluminum metal leaf and a second layer covering the first layer made of zinc (col. 10 lines 11-15). However Fauvarque fails to disclose the method of depositing the layer by physical vapor deposition.

Masotti teaches depositing a metal onto a support metal by cathodic sputtering (a physical vapor deposition technique) provides excellent adhesion between the materials

(col. 1 lines 44-59). It would have been obvious to one of ordinary skill in the art at the time of the invention to deposit the second layer onto a first layer by physical vapor deposition would adhere the first layer to the second layer.

As to claim 7, Fauvarque discloses the anode comprising a first layer of aluminum and a second layer of zinc (col. 10 lines 11-15) but fails to disclose four layer anode with an alternating of the first layer and the second layer.

However, it has been held that "mere duplication of parts has no patentable significance unless a new and unexpected result is produced" (MPEP 2144.04(VI)(B); *In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960)).

Furthermore Masotti teaches depositing a metal onto a support metal by cathodic sputtering (a physical vapor deposition technique) provides excellent adhesion between the materials (col. 1 lines 44-59). It would have been obvious to one of ordinary skill in the art at the time of the invention to deposit the second layer onto a first layer by physical vapor deposition would adhere the first layer to the second layer.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARIA J. LAIOS whose telephone number is (571)272-9808. The examiner can normally be reached on Monday - Thursday 10 am -7 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dah-Wei Yuan can be reached on 571-272-1295. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. J. L./  
Examiner, Art Unit 1795

/Dah-Wei D. Yuan/  
Supervisory Patent Examiner, Art Unit 1795